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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]About the container with a cap provided with the cap and the container sealed by cap, this invention relates to the container with a cap with which an inside can serve as positive pressure, in order to use carbonated drink water etc. as contents especially.

[0002]

[Description of the Prior Art]The container with a cap provided with the cap and the container sealed by cap is widely used when selling carbonated drink water, soft drinks, etc. The cap is provided with the top plate section, the body caudad installed from the periphery of the top plate section, the female screw part provided in the inner skin of the body, and the sealant provided in the back side of the top plate section. The container is provided with the body of approximately closed-end cylindrical shape, the approximately cylindrical regio oralis which it was formed successively while the diameter was reduced by the body, and carried out the opening to the upper part, and the male thread part provided in the peripheral face of the regio oralis. According to the container with a cap of this composition, a cap rotates in the seal direction to the regio oralis, a female screw part is screwed on to a male thread part, and a container is sealed because a sealant welds by pressure to the upper bed part of the regio oralis over the perimeter. A cap rotates from a sealed state to an unsealing direction to the regio oralis, a female screw part spirals to a male thread part, and seal is canceled because a sealant deserts the upper bed part of the regio oralis.

[0003]By the way, if the ease of drinking of contents when a mouth is directly attached to the regio oralis of a container, the ease of pouring of the contents to a glass, etc. are taken into consideration, it may be preferred to expand the diameter of the regio oralis and to consider it as a certain amount of wide mouth. However, since the touch area at the time of screwing with the male thread part of the regio oralis and the female screw part of a cap will become large if the regio oralis is made into a wide mouth, opening of a container will take comparatively big power and there is a possibility that user-friendliness may worsen.

[0004]Then, it is possible to provide two or more lugs in the inner skin of the cap which replaces with a male thread part, provides two or more engagement threads in the peripheral face of the regio oralis of a container, replaces with a female screw part, and engages with an engagement thread. If it has this composition, since the touch area of the engagement thread of the regio oralis of a container and the lug of a cap is small, only by rotating a cap by slight power, engagement to a lug and an engagement thread

will be canceled and a sealed state will be canceled.

[0005]However, after inside has become positive pressure for the reasons of being put into carbonated drink water, when a container is opened, the following inconvenience may arise. That is, at this time, while the gas in a container spouts rapidly from the gap made between the regio oralis of a container, and a sealant, blowing is made, and there is a possibility of giving a user displeasure. There is also a possibility that contents may blow off from this gap with gas. There is also a possibility of a cap being pushed up by the gas spouted rapidly, and separating with sufficient vigor from the regio oralis from this gap.

[0006]

[Problem(s) to be Solved by the Invention]In view of this background, this invention makes it solution SUBJECT to provide the container with a cap which prevents a cap from preventing blowing by rapid jet of the gas in a container when opening the container of a positive pressure state, and preventing blow off of contents, or separating with sufficient vigor from the regio oralis.

[0007]

[Means for Solving the Problem]A body to which this invention extends caudad from a top plate section of an approximate circle form, and a periphery of this top plate section, A cap provided with two or more lugs which project in an inner diameter direction of this body, and a sealant which has the elasticity provided in the back side of this top plate section, meeting a peripheral face -- abbreviated -- while it has the approximately cylindrical regio oralis in which two or more engagement threads prolonged horizontally were provided and this lug engages with this engagement thread, it is related with a container with a cap provided with a container sealed by this cap because this sealant welds by pressure to an upper bed part of this regio oralis over the perimeter.

[0008]In a container with a cap of the 1st mode of this invention for solving said SUBJECT. When said cap rotates from a sealed state to an unsealing direction to regio oralis of said container, the 1st restricting part that regulates a rise of some lugs, and the 2nd restricting part that regulates a rise of the remaining lugs of which engagement to said engagement thread was canceled in a position higher than this 1st restricting part are provided in a peripheral face of this regio oralis. When a rise of some lugs is regulated by the 1st restricting part, a rise of the remaining lugs is regulated by the 2nd restricting part and this cap inclines to this regio oralis, a notch which gives minute clearance between said sealant and an upper bed part of this regio oralis by the 2nd restricting part side is formed in a periphery edge of this sealant.

[0009]When a cap rotates from a sealed state of a container with a cap of said composition to an unsealing direction to regio oralis, an inside of a container assumes that upward power is added to a cap by positive pressure. While a rise is regulated for some lugs by the 1st restricting part at this time, the remaining lugs of which engagement to an engagement thread was canceled go up, and a cap inclines gradually to regio oralis. And a rise of a lug by which a rise is not regulated by the 1st restricting part is regulated by the 2nd restricting part in a position higher than the 1st restricting part, and, thereby, an inclination of a cap is regulated.

[0010]At this time, minute clearance produces between a sealant and regio oralis by a notch part formed in a sealant in a side [restricting part /, i.e., cap inclined and went up to regio oralis, / side / 2nd]. And when inside of a container is positive pressure, gas in a container escapes from this minute clearance gradually, comes out from it, and a positive pressure state is canceled gradually. A rise of some lugs is regulated by the 1st restricting part, a rise of the remaining lugs is regulated by the 2nd restricting part,

and an inclination of a cap which has received upward power by gas in a container is regulated. Therefore, gas in a container can spout rapidly and the situation from which blowing is made, contents blow off, or a cap separates with sufficient vigor from regio oralis can be prevented. A cap is removed from regio oralis because a cap rotates to an unsealing direction after an appropriate time.

[0011] In a container with a cap of the 1st mode, it is preferred that said 1st restricting part comprises to extend said engagement thread. When said 2nd restricting part rotates in the seal direction to regio oralis of said container with said cap, it is preferred to be constituted by guidance thread which shows said lug to said engagement thread. In this case, structure of regio oralis can be simplified as compared with a case where the 2nd restricting part is provided separately from a guidance thread independently [a case where the 1st restricting part is provided separately from an engagement thread independently].

[0012] In a container with a cap of the 2nd mode of this invention for solving said SUBJECT, when said cap rotates from a sealed state to an unsealing direction to regio oralis of said container, a restricting part which regulates a rise of said lug of which engagement to said engagement thread was canceled is provided in a peripheral face of this regio oralis. As a cap went up to regio oralis, when a rise of a lug is regulated by restricting part, a notch which gives minute clearance between said sealant and an upper bed part of this regio oralis is formed in a periphery edge of this sealant.

[0013] When a cap rotates from a sealed state of a container with a cap of said composition to an unsealing direction to regio oralis, an inside of a container assumes that upward power is added to a cap by positive pressure. At this time, a lug of which engagement to an engagement thread was canceled goes up, on the whole, a cap goes up to regio oralis, a rise of a lug is regulated by restricting part on the way, and, thereby, a rise of a cap is regulated.

[0014] At this time, minute clearance produces between a sealant and regio oralis by a notch part formed in a sealant, when inside of a container is positive pressure, gas in a container escapes from this minute clearance gradually, comes out from it, and a positive pressure state is canceled gradually. A rise of a lug is regulated by restricting part and a rise of a cap which has received upward power by gas in a container is regulated. Therefore, gas in a container can spout rapidly and the situation from which blowing is made, contents blow off, or a cap separates with sufficient vigor from regio oralis can be prevented.

[0015] In a container with a cap of the 2nd mode, when said restricting part rotates in the seal direction to regio oralis of said container with said cap, it is preferred to be constituted by horizontal part of a guidance thread which shows said lug to said engagement thread. a restricting part -- abbreviated -- since it is level, it is certainly controllable to go up, while a lug slides to a restricting part. Structure of regio oralis can be simplified as compared with a case where a restricting part is provided separately from a guidance thread independently.

[0016]

[Embodiment of the Invention] The embodiment of the container with a cap of this invention is described using a drawing. Drawing 1 is a composition explanatory view of the container with a cap of a 1st embodiment, and drawing 2 is a composition explanatory view of a cap of the container with a cap of a 1st embodiment, Drawing 3 is an opening explanatory view of the container with a cap of a 1st embodiment, and drawing 4 is a notional functional description figure of the container with a cap of a 1st embodiment, Drawing 5 is a composition explanatory view of the container with a cap of a 2nd embodiment, drawing 6 is an opening explanatory view of the container with a cap of a 2nd embodiment, and drawing 7 is a composition explanatory view of a cap of the container with a cap of

other embodiments

[0017]First, the container with a cap of a 1st embodiment of this invention is explained using drawing 1 thru/or drawing 4. The container with a cap of a 1st embodiment shown in drawing 1 is provided with the following.

The cap 1 formed from metal

The container 2 sealed by the cap 1.

[0018]The cap 1 is provided with the following.

The approximate circle tabular top plate section 3 which has an edge part which descends with a flare. The body 6 caudad prolonged after passing through the two stepped parts 4 and 5 from the edge part of the top plate section 3.

The four lugs 7 which project in an inner direction from the lower end part of the body 6

The cap 1 is pasted up on the back side of the top plate section 3, and the sealant 8 of the approximate circle shape which consists of elastic materials, such as polyethylene, is formed. As shown in drawing 2, two or more notches 9 of abbreviation triangular shape are formed in the sealant 8 over the perimeter.

[0019]The container 2 has the approximately cylindrical regio oralis 10 which carried out the opening to the upper part, and the four engagement threads 11 prolonged at an abbreviated level along the peripheral face protrude on the regio oralis 10. The guidance threads 12 prolonged aslant

[approximately right] at the right end of the engagement thread 11 are formed successively, and the stoppers 13 caudad prolonged at the left end of the engagement thread 11 are formed successively. As shown in drawing 4, the length and shape are [the four engagement threads 11 and guidance thread 12] different, respectively. That is, there is the relation "length of left end engagement thread 11" ** "length of engagement thread 11 of the inside left" <"length of engagement thread 11 of the Nakamigi slippage" < "length of the right end engagement thread 11." Although a left end and the guidance thread 12 of the inside left are the length same in abbreviation, after going up to the right slant a little suddenly [the latter] to the former going up gently uniformly aslant [right], it has extended at an abbreviated level. Although the Nakamigi slippage and the right end guidance thread 12 are shape which rises aslant [right] like the left end guidance thread 12, respectively, both are shorter than the left end guidance thread 12, and their former is longer than the latter. A part of two engagement threads 11 on the right-hand side of drawing 4 constitute the 1st restricting part 14 of this invention, and the sloping part of the two left-hand side guidance threads 12 constitutes the 2nd restricting part 15 of this invention.

[0020]When the container 2 is sealed by the cap 1 of said composition, the cap 1 rotates to the regio oralis 10 in the seal direction (seeing from a top the left in the figure, clockwise rotation). The lug 7 moves to the left along with the margo-inferior part of the guidance thread 12 by this, it shows around to the margo-inferior part of the engagement thread 11, and the movement is regulated by the stopper 13. The cap 1 descends because the lug 7 descends to the margo-inferior part of the engagement thread 11, the sealant 8 pressed by the stepped part 4 as shown in drawing 1 is welded by pressure to the upper bed part of the regio oralis 2 over the perimeter, and the container 2 is sealed. At this time, as shown in the right-hand side of drawing 1, the maximum diameter part of the sealant 8, i.e., the portion in which the notch 9 is not formed, is welded by pressure not only to the upper bed part of the regio oralis 10 but to the upper bed flank. On the other hand, the portion in which the notch 9 of the sealant 8 was formed is welded by pressure only to the upper bed part of the regio oralis 10, as shown in the left-hand side of

drawing 1, and the pressure welding face product is comparatively small.

[0021]Here, signs that the cap 1 is removed and opened from the container 2 in the state where the inside serves as positive pressure are explained using drawing 3 and drawing 4. At this time, the cap 1 rotates to an unsealing direction (it sees and counter clockwise from figure Nakamigi and a top), and the four lugs 7 move to the right along with the margo-inferior part of the engagement thread 11. The four lugs 7 result to the position shown with the imaginary line 7a, respectively, as for the two right-hand side lugs 7, the rise is regulated in contact with the margo-inferior part of the 1st restricting part 14, and, as for the two left-hand side lugs 7, engagement to the engagement thread 11 is canceled. Next, the lug 7 side which can go up freely can be pushed up, and the cap 1 inclines, as a white arrow shows to drawing 3 with the pressure of the gas in the container 2. And the two lugs 7 on the left-hand side of drawing 4 result in the position shown with the imaginary line 7b, the rise is regulated by the 2nd restricting part 15 in a position higher than the 1st restricting part 14, and, thereby, the inclination of the cap 1 is regulated.

[0022]At this time, the sealant 8 has been welded by pressure to the side by which the cap 1 is not going up as shown in drawing 3, i.e., the rise of the lug 7 is regulated by the 1st restricting part, still more at the upper bed part of the regio oralis 10. The minute clearance c produces between the sealant 8 and the upper bed edge part of the regio oralis 10 by the notch 9 in the portion by which the notch 9 was formed in the side by which the rise of the left-hand side 7 where the cap 1 went up, i.e., a lug, is regulated by the 2nd restricting part 15 on the other hand. From this minute clearance c, the gas in the container 2 falls out gradually, comes out, and positive pressure state release is carried out. And when the cap 1 rotates further to an unsealing direction and all the lugs 7 separate from the guidance thread 12, the cap 1 is removed from the container 2.

[0023]Then, the container with a cap of a 2nd embodiment is explained using drawing 5 and drawing 6. The four engagement threads 11 and the guidance thread 12 of the container of a 2nd embodiment shown in drawing 5 are identical shape altogether. Except for the point that the restricting part 16 of the abbreviated level is formed in the middle of the sloping part of the guidance thread 10, since it is the almost same composition as the container with a cap of a 1st embodiment, while using the same numerals, explanation is omitted.

[0024]Here, signs that the cap 1 is removed and opened from the container 2 in the state where the inside serves as positive pressure are explained using drawing 6. At this time, the cap 1 rotates to an unsealing direction (it sees and counter clockwise from figure Nakamigi and a top), and the four lugs 7 move to the right along with the margo-inferior part of the engagement thread 11. Then, engagement to the engagement thread 11 is canceled, and the lug 7 is guided at the guidance thread 12, and moves to the method of the diagonal right. And the lug 7 results in the middle of the guidance thread 12, as a solid line shows from the position shown in drawing 6 with an imaginary line, respectively. At this time, as for the lug 7, that rise is regulated by the restricting part 16 and, thereby, a rise of the cap 1 is regulated. Since the restricting part 16 is formed in the abbreviated level, the situation where the lug 7 goes up along with the margo-inferior part of the guidance thread 12 is prevented, and a rise of the cap 1 is regulated certainly.

[0025]At this time, in the portion in which the notch 9 is not formed, as shown in the right-hand side of drawing 6, the sealant 8 has been welded by pressure to the upper bed part of the regio oralis 10 still more. On the other hand, in the portion in which the notch 9 was formed, the minute clearance c produces between the sealant 8 and the upper bed edge part of the regio oralis 10 by the notch 9. The gas

in the container 2 falls out from this minute clearance c gradually, comes out of it, and a positive pressure state is canceled. And when the cap 1 rotates further to an unsealing direction and all the lugs 7 separate from the guidance thread 12, the cap 1 is removed from the container 2.

[0026]According to the container with a cap of said two embodiments, the minute clearance c produces between the sealant 8 and the upper bed part of the regio oralis 10 by the notch part 9 formed in the sealant 8, the gas in the container 2 falls out and comes out from this minute clearance c, and a positive pressure state is canceled gradually. At a 1st embodiment, the inclination of the cap 1 is regulated by the rise of the lug 7 being regulated by the 1st restricting part 14 and the 2nd restricting part 15. In a 2nd embodiment, the rise of the lug 7 is regulated by the restricting part 16, and a rise of the cap 1 is regulated. Therefore, the gas in the container 2 can spout rapidly and the situation from which blowing is made, contents blow off, or the cap 1 separates with sufficient vigor from the regio oralis 10 can be prevented.

[0027]the notch 9 having boiled the periphery of the sealant 8 with approximately triangular shape, having lacked and having been formed in said two embodiments, as shown in drawing 2, but. As shown in drawing 7 (a), 7 (b), and 7 (c) as other embodiments, respectively, it cuts, the sealant 8 lacks so that an angle may serve as the roundish shape of a square, the Shogo drawing shape, and regular hexagon shape, and the notch 9 may be formed. As shown in drawing 7 (d), it cuts and lacks and the notch 9 may be formed so that the sealant 8 may serve as approximately gear shape, and the notch 9 may be made to be formed by the infeed line of a large number which tend toward the center of the sealant 8 as shown in drawing 7 (e). Although the notch 9 is formed over the perimeter of the sealant 8 in said embodiment, it is selectively accepted as other embodiments and the notch 9 may be formed.

[0028]Although the cap 1 is formed from metal in said embodiment, it may be formed from other raw materials, such as a plastic, as other embodiments.

[0029]Although the four threads 7 are formed in said embodiment, the number may be how many as long as seal of a container is possible.

[0030]Although the 1st restricting part 14 is constituted by a part of engagement thread 11 and the 2nd restricting part 15 is constituted from a 1st embodiment by a part of guidance thread 12, The 1st restricting part 14 may be formed separately from the engagement thread 11 independently as other embodiments, or the 2nd restricting part 15 may be formed separately from the guidance thread 12 independently.

[0031]Although the restricting part 16 is horizontally formed in a 2nd embodiment, as other embodiments, the restricting part 16 inclines more gently-sloping than the sloping part of the guidance thread 12, and may be formed. Although the restricting part 16 constitutes a part of guidance thread 12 from a 2nd embodiment, both may be provided separately independently as other embodiments.

[Translation done.]